Draft 2010 IEP POD Workplan: Recommended New Elements (n=29)

Costs, Funding source, and Review Tier & Rank

New Solicited Elements (n=14)

From 2009-10 IEP POD Proposal Solicitation; Review Tiers: A=highly recommended, B=recommended, C=not recommended; Ranks within tiers: 1=high, 2=middle, 3=low

Table 2A Page Number (2-17-2010 version)	IEP Program Element Number	PI Last Name	PI Affilition	Element Title	Priority Topic	2010 Cost (1 year)	Funding From	Intended study duration (years)	Total Cost (whole study duration, if given)	Projected Year 2 Cost	Projected Year 3 Cost	Review Tier & Rank for Solicited Element Proposals
11	2010-169	Kimmerer	SFSU	Delta smelt feeding and foodweb interactions	Bottom-Up	$ 399840	USBR	3		$ 300000	$ 300000	A1
12	2010-177	Stillman	SFSU	Metabolic responses to variable salinity environments in field-acclimatized Corbula amurensis	Bottom-up	$ 137179	USBR	1				A2
12	2010-178	Thompson	SFSU	Bivalve effects on the food web supporting delta smelt	Bottom-up	$ 88938	USBR	3	$ 218938	$ 52000	$ 70000	A2
12	2010-181	Loge	UCD	Longfin Smelt Bioenergetics	Bottom-Up	$ 128422	USBR	2	$ 230220	$ 101798		A3
12	2010-170	Lindberg	UCD	How will Longfin smelt respond to Fall X2 manipulations? Experimentally determining early life-stage sensitivity to salinity	Habitat	$ 69866	USBR	1				A1
17	2010-171	Ustin	UCD	Remote sensing mapping and monitoring of Microcystis and turbidity in the upper San Francisco Estuary	Habitat and Bottom-up	$ 134124	USBR	1				A1
18	2010-175	Kendall	USGS	Evaluation of the effect of seasonal variations in flow on the spatial and temporal variations of nutrients, organic matter, and phytoplankton in the Sacramento River and northern San Francisco Bay	Habitat and Bottom-up	$ 42000	USBR	1				A2
28	2010-172	Weston	UCB	The role of pyrethroid insecticides in limiting prey availability for delta smelt in the North Delta.	Habitat and Bottom-up	$ 158093	USBR	1				A2
29	2010-173	Dugdale	SFSU	Distribution, concentrations and fate of ammonium in the Sacramento River and the low salinity zone: determination of phytoplankton uptake and bacterial nitrification rates.	Habitat and Bottom-up	$ 77280	USBR	3		$ 80000	$ 80000	A2
29	2010-174	Parker/Dugdale	SFSU	The influence of elevated ammonium (NH4) on phytoplankton physiology in the San Francisco Estuary Delta during fall: exploring differences in nutrients and phytoplankton in the Sacramento and San Joaquin Rivers and how variation in irradiance via changing river flow, modulates NH4 effects	Habitat and Bottom-up	$ 114297	USBR	3		$ 115000	$ 115000	A2
18	2010-179	Kendall	USGS	Determination of the causes of seasonal and spatial variations in NH4 sources, sinks, and contributions to algal productivity in the Sacramento River, Delta, and northern San Francisco Bay using a multi-isotope approach	Habitat and Bottom-up	$ 242400	USBR	2	$ 315900	$ 73500		A3
18	2010-180	Kimmerer, Gross	USGS	Hydrodynamic and particle tracking modeling of delta smelt habitat and prey	Habitat and Bottom-up	$ 339186	USBR	2		$ 300000		A3
11	2010-168	Hobbs	UCD	Monitoring the Inter-annual Variability of Delta Smelt Population Contingents and Growth	Habitat and Top-Down	$ 98275	USBR	1				A2
18	2010-176	Conrad, Crain, & Sih	UCD	Influences of water quality and submerged aquatic vegetation on largemouth bass distribution, abundance, diet composition and predation on Delta smelt in the Sacramento-San Joaquin Delta	Top-Down	$ 173214	USBR	1				A2
						$ 2203114				$ 1022298	$ 565000	

New Directed Elements (n=15)

Includes new elements conducted entirely with redirected IEP agency staff and existing resources, cost shown as $0

Table 2A Page Number (2-17-2010 version)	IEP Program Element Number	PI Last Name	PI Affilition	Element Title	Priority Topic	2010 Cost (1 year)	Funding From	Intended study duration (years)	Total Cost (whole study duration, if given)	Projected Year 2 budget	Projected Year 3 budget
9	2010-108	Lindberg	UCD	Quantifying Effects of Naturally Occurring Physical Stimuli on Delta Smelt Behavior	Habitat	$ 100000	USBR	1			
13	2010-182	Hobbs	UCD	Natal origins of delta smelt with new isotope tracers	Habitat	$ 40000	USBR	1			
29	2010-183	Werner	UCD	Novel molecular and biochemical biomarker work	Habitat	$ 220000	USBR	1			
10	2010-166	Schreier	DWR	Using genetic techniques to detect Mississippi silverside (Menidia audens) predation on larval delta smelt (Hypomesus transpacificus).	Top-Down	$ 46225	DWR	1			
11	2010-167	LeDoux-Bloom	DWR	Investigating the presence, migration patterns, and site fidelity, of sub-adult striped bass (Morone saxatilis) in the Delta, Suisun Bay and San Francisco Estuary.	Top-Down	$ 34294	DWR	2		$ 35000	
13	2010-184	Foott	USFWS	Disease and physiology monitoring in wild delta smelt adults	Population	$ 0	USFWS	1			
28	2010-164	Dugdale	SFSU	Spatial and temporal variability in nutrients in Suisun Bay in relation to spring phytoplankton blooms	Habitat and Bottom-up	$ 25000	SFBRWQCB/ SWAMP	1			
27	2010-157	Werner	UCD	Acute and Chronic Toxicity of Contaminant Mixtures and Multiple Stressors	Habitat	$ 40000	CVRWQCB	1.5			
27	2010-158	Tjeerdema, Hunt	UCD	Advancing Procedures for Extracting and Recovering Chemicals of Concern from Sediment Interstitial Water	Habitat	$ 40000	CVRWQCB	1.5			
27	2010-159	Weston	UCB	Investigation of pyrethroid pesticides in the American River	Habitat	$ 100000	CVRWQCB	1.5			
28	2010-165	Foe, Dahlgren	CVRWQCB & UCD	Ammonia Sampling Program for the Sacramento-San Joaquin Delta Estuary	Habitat and Bottom-up	$ 68000	CVRWQCB	1.3			
27	2010-160	The	UCD	Full Life-Cycle Bioassay Approach to Assess Chronic Exposure of Pseudodiaptomus forbesi to Ammonia	Habitat and Bottom-up	$ 77000	SWRCB	0.3			
28	2010-161	Werner	UCD	Acute Toxicity of Ammonia/SRWTP Effluent on Delta Smelt and Surrogate Species	Habitat	$ 65000	SWRCB	1			
10	2010-162	Bennett	UCD	Potential Loss of Life History Variation and the Decline of Delta Smelt (Big Mama Paper)	Population, Top-Down	$ 32000	SWRCB	0.8			
17	2010-163	Bombardelli	UCD	Comparison of Flow and Transport Models for the Sacramento-San Joaquin Delta	Habitat	$ 59000	SWRCB	1.2			
						$ 860993				$ 35000	$ 0
				Total Solicited & Directed:		$ 3064107				$ 1057298	$ 565000

Draft 2010 IEP POD Workplan: Recommended New Elements (n=29)

2010 Cost and Study Questions

New Solicited Elements (n=14)

From 2009-10 IEP POD Proposal Solicitation

Table 2A Page Number (2-17-2010 version)	IEP Program Element Number	PI Last Name	PI Affilition	2010 Cost (1 year)	Element Title	Priority Topic	Study Questions
11	2010-169	Kimmerer	SFSU	$ 399840	Delta smelt feeding and foodweb interactions	Bottom-Up	Overall: what is the food supply of delta smelt in the low-salinity zone (LSZ) during summer to fall? Specific questions: Task 1: To what extent is the ingestion rate of delta smelt limited by prey density? How do turbidity preference and predator avoidance interact with food supply to control feeding behavior? Task 2: How do population dynamics of P. forbesi vary with location in the Delta and LSZ, and how are they affected by interactions with other copepods and clams, food resources, and water diversions? What is the transport rate of P. forbesi and phytoplankton to and from the LSZ? Task 3: Does gelatinous zooplankton abundance in the LSZ vary with X2? 2. Are gelatinous zooplankton important in the LSZ in terms of their consumption rates?
12	2010-177	Stillman	SFSU	$ 137179	Metabolic responses to variable salinity environments in field-acclimatized Corbula amurensis	Bottom-up	How much metabolic variation do we see in Corbula acclimatized to different salinities across sites and seasons? How are Corbula partitioning energy? How does variation in water chemistry and planktonic assemblage alter the metabolic physiology of Corbula?
12	2010-178	Thompson	SFSU	$ 88938	Bivalve effects on the food web supporting delta smelt	Bottom-up	Overall: How do Corbula amurensis and Corbicula fluminea affect the food web supporting Delta Smelt, and how are they affected by flow variability? Specifically: How do the grazing rates of Corbicula fluminea and Corbula amurensis vary with longitudinal location in the Delta and the LSZ? How do the grazing rates of Corbicula fluminea and Corbula amurensis vary with water depth in the Delta and the LSZ? How do the population dynamics of Corbicula fluminea and Corbula amurensis (recruitment, growth, and mortality) vary as a function of X2 position in fall? How do antecedent fall salinity conditions in the LSZ affect bivalve population biomass and grazing rates in the following spring?
12	2010-181	Loge	UCD	$ 128422	Longfin Smelt Bioenergetics	Bottom-Up	What are maximum consumption and metabolic rates for longfin smelt? What daily growth rates should be used in the bioenergetics model component of an individual based model for longfin smelt?
12	2010-170	Lindberg	UCD	$ 69866	How will Longfin smelt respond to Fall X2 manipulations? Experimentally determining early life-stage sensitivity to salinity	Habitat	What is the range of suitable habitat for longfin smelt reproduction and early development? How does the position of X2 in the fall affect the spawning and early development habitats of lonfin smelt, if at all?
17	2010-171	Ustin	UCD	$ 134124	Remote sensing mapping and monitoring of Microcystis and turbidity in the upper San Francisco Estuary	Habitat and Bottom-up	What are the reflectance properties of the water in the SFE across gradients of suspended solids and Microcystis abundance (Hestir, Lehman, Downing)? How do chlorophyll a concentration, total and volatile suspended solids, total and dissolved organic carbon and Microcystis abundance vary across the delta over the seasons (field survey (Lehman) & Landsat mapping (Hestir)?
18	2010-175	Kendall	USGS	$ 42000	Evaluation of the effect of seasonal variations in flow on the spatial and temporal variations of nutrients, organic matter, and phytoplankton in the Sacramento River and northern San Francisco Bay	Habitat and Bottom-up	What are the nitrification rates and how do changes in flows and relative amounts of water from different sources, and the location of X2, especially in the fall, relate to sources, fate, and transport of constituents important to the base of the smelt and other foodwebs (nutrients, chl, OM) in the northern San Francisco Bay, Delta, Cache Slough, and lower Sacramento River?
28	2010-172	Weston	UCB	$ 158093	The role of pyrethroid insecticides in limiting prey availability for delta smelt in the North Delta.	Habitat and Bottom-up	Do pyrethroid pesticides reduce populations of copepod prey in the Cache Slough region during the delta smelt spawning & larval/juvenile period (February - June)?
29	2010-173	Dugdale	SFSU	$ 77280	Distribution, concentrations and fate of ammonium in the Sacramento River and the low salinity zone: determination of phytoplankton uptake and bacterial nitrification rates.	Habitat and Bottom-up	Can pelagic nitrification rates be measured (and validated to a degree) in the SFE using 15N labeling, the NH4 micro-diffusion technique and mass spectrometry? What is the distribution of NH4 downstream from Sacramento to Suisun Bay in spring, summer and fall? What are the rates of a) bacterial/archaeal nitrification and b) phytoplankton NH4 uptake downstream from Sacramento to Suisun Bay in spring, summer and fall? Does the fate of NH4 (i.e. uptake and nitrification) change with season, salinity and flow?
29	2010-174	Parker/Dugdale	SFSU	$ 114297	The influence of elevated ammonium (NH4) on phytoplankton physiology in the San Francisco Estuary Delta during fall.	Habitat and Bottom-up	Does NH4 play a bottom-up role in the delta smelt food web by modulating phytoplankton growth in the northern Delta (river-LSZ transects during the fall) and how does it interact with light (enclosure experiments)?
18	2010-179	Kendall	USGS	$ 242400	Determination of the causes of seasonal and spatial variations in NH4 sources, sinks, and contributions to algal productivity in the Sacramento River, Delta, and northern San Francisco Bay using a multi-isotope approach	Habitat and Bottom-up	What are the seasonal contributions of NH4 from SRWTP, tributary, and other sources to critical habitats? How do nitrification rates vary seasonally and in different reaches of the SR and upper estuary? Which areas act as nutrient sources and sinks? Can we quantify the NH4 from WWTPs versus agricultural drains to different sites and seasons? How do NH4, NO3, and organic matter concentrations vary under different hydrologic conditions? Does the phytoplankton species composition in the Sacramento River downstream of SRWTP vary with the concentration of NH4 or any other constituent in the effluent or tributaries identified by isotope analysis?
18	2010-180	Kimmerer, Gross	USGS	$ 339186	Hydrodynamic and particle tracking modeling of delta smelt habitat and prey	Habitat and Bottom-up	Task 1: How does the habitat area and volume for delta smelt and other fishes vary with freshwater flow? Task 2: What patterns of vertical swimming by planktonic organisms in the LSZ result in tidal patterns of vertical distribution similar to those observed? How does the observed tidal vertical migration of planktonic organisms influence their retention and transport in and near the LSZ? How does this retention and transport vary with flow conditions?
11	2010-168	Hobbs	UCD	$ 98275	Monitoring the Inter-annual Variability of Delta Smelt Population Contingents and Growth	Habitat and Top-Down	What are the mechanisms (e.g. climate variability, hydrology) responsible for different life history contingents? How do flow variations and CVP and SWP entrainment affect contingents?
18	2010-176	Conrad, Crain, & Sih	UCD	$ 173214	Influences of water quality and submerged aquatic vegetation on largemouth bass distribution, abundance, diet composition and predation on Delta smelt in the Sacramento-San Joaquin Delta	Top-Down	How do abiotic (e.g., flow variability, turbidity, water temperature, etc.) and biotic (e.g., submerged aquatic vegetation) factors influence largemouth bass distribution and abundance in the Delta, and ultimately, their impacts on delta smelt and other pelagic fishes currently in decline? What are the abundance and the diet composition of largemouth bass and other potential predators in areas where delta smelt are known to be present? What is the relationship between biomass density and species composition of submerged vegetation beds and the invertebrate community assemblage and biomass? Does variation in the invertebrate community within the submerged vegetation explain variability in the abundance and/or diet composition of juvenile largemouth bass captured at the same locations?
				$ 2203114			

Draft 2010 IEP POD Workplan: 2010 Cost and Study questions

2010 Cost and Study Questions

New Directed Elements (n=15)

Includes new elements conducted entirely with redirected IEP agency staff and existing resources

Table 2A Page Number (2-17-2010 version)	IEP Program Element Number	PI Last Name	PI Affilition	2010 Cost (1 year)	Element Title	Priority Topic	Study Questions
9	2010-108	Lindberg	UCD	$ 100000	Quantifying Effects of Naturally Occurring Physical Stimuli on Delta Smelt Behavior	Habitat	1A, 1E - Do juvenile and adult delta smelt discriminate levels (and types) of turbid and saline environments and make behavioral choices based on this information? Do delta smelt show differences in feeding, survival and swimming behavior at several levels and/or types of turbidity? Does salinity or temperature affect feeding, survival and swimming behavior under optimal turbidity conditions?
13	2010-182	Hobbs	UCD	$ 40000	Natal origins of delta smelt with new isotope tracers	Habitat	Can Mercury isotopes be used along with Strontium isotopes to improve the resolution of otolith analyses?
29	2010-183	Werner	UCD	$ 220000	Novel molecular and biochemical biomarker work	Habitat	Can novel biomarker tools be used to reliably monitor and assess specific sublethal impairments in important life history parameters (metabolism, growth and reproduction) of delta smelt exposed to ambient Delta water and specific contaminants? Can these tools help draw conclusions about which contaminants may be causing sublethal impairments in delta smelt? What is the temporal and spatial distribution of sublethal impairments and contaminants exposure of delta smelt detected with these tools in the Delta? How does this compare to the acute toxicity patterns found for delta smelt in the Delta?
10	2010-166	Schreier	DWR	$ 46225	Using genetic techniques to detect Mississippi silverside (Menidia audens) predation on larval delta smelt (Hypomesus transpacificus).	Top-Down	Can a high-throughput genetic PCR assay that specifically screens for the presence of delta smelt DNA in Mississippi silverside gut contents be developed? How sensitive is the PCR method to detecting delta smelt DNA in gut contents? Is there predation of of wild Mississippi silverside (Menidia audens) on larval delta smelt (Hypomesus transpacificus) in the Sacramento-San Joaquin Delta? If yes, how frequently does it occur?Do wild silverside predate larval delta smelt and at what frequency? Are there any patterns between larval delta smelt predation and environmental variables (flow, turbidity, salinity, temperature) or other constituents in the gut?
11	2010-167	LeDoux-Bloom	DWR	$ 34294	Investigating the presence, migration patterns, and site fidelity, of sub-adult striped bass (Morone saxatilis) in the Delta, Suisun Bay and San Francisco Estuary.	Top-Down	What geographical areas are sub-adult striped bass using and when? Do sub-adult striped bass exhibit site fidelity? What, if any, are the relationships between movement patterns and/or site fidelity with water quality and predation?
13	2010-184	Foott	USFWS	$ 0	Disease and physiology monitoring in wild delta smelt adults	Population	Do subadult and adult delta smelt captured from the Spring Kodiak Trawl in the lower Sacramento River show evidence of fish pathogens, tissue abnormalities (histology), altered energy reserves (muscle triglycerides) and abnormal osmoregulatory status (gill Na-K-ATPase)?
28	2010-164	Dugdale	SFSU	$ 25000	Spatial and temporal variability in nutrients in Suisun Bay in relation to spring phytoplankton blooms	Habitat and Bottom-up	How do nutrients vary in Suisun Bay temporally and spatially and how does this relate to spring phytoplankton blooms? What are the major sources of ammonium in Suisun Bay?
27	2010-157	Werner	UCD	$ 40000	Acute and Chronic Toxicity of Contaminant Mixtures and Multiple Stressors	Habitat	How do various contaminant mixtures affect their toxicity to Hyalella azteca?
27	2010-158	Tjeerdema, Hunt	UCD	$ 40000	Advancing Procedures for Extracting and Recovering Chemicals of Concern from Sediment Interstitial Water	Habitat	How do sediment-bound toxicants react to Toxicity Identification Evaluation (TIE) manipulations when extracted from the interstitial water?
27	2010-159	Weston	UCB	$ 100000	Investigation of pyrethroid pesticides in the American River	Habitat	Is storm water runoff to the American River toxic to H. azteca?
28	2010-165	Foe, Dahlgren	CVRWQCB & UCD	$ 68000	Ammonia Sampling Program for the Sacramento-San Joaquin Delta Estuary	Habitat and Bottom-up	What are the concentrations and distribution of chlorophyll, ammonia, and various nutrients primarily in the lower Sacramento River and northern Delta? Are total and unionized ammonia concentrations in these areas potentially toxic to sensitive resident aquatic organisms? Provide data to support development of an ammonia fate and transport model.
27	2010-160	The	UCD	$ 77000	Full Life-Cycle Bioassay Approach to Assess Chronic Exposure of Pseudodiaptomus forbesi to Ammonia	Habitat and Bottom-up	What are effects of chronic exposure to ammonia for the copepod Pseudodiaptomus forbesi?
28	2010-161	Werner	UCD	$ 65000	Acute Toxicity of Ammonia/SRWTP Effluent on Delta Smelt and Surrogate Species	Habitat	1. What is the range of no (NOEC) and low (LOEC) effect ranges of SRWTP effluent mixed into Sacramento River water from Garcia Bend for delta smelt? 2. Can larval rainbow trout be used as a surrogate species for toxicity testing and toxicity identification evaluations?
10	2010-162	Bennett	UCD	$ 32000	Potential Loss of Life History Variation and the Decline of Delta Smelt (Big Mama Paper)	Population, Top-Down	Has selective entrainment of early-spawned larvae been of sufficient magnitude and duration to cause undesirable evolutionary change in delta smelt? If such changes have occurred, how can management reverse the process and contribute to restoration of the species?
17	2010-163	Bombardelli	UCD	$ 59000	Comparison of Flow and Transport Models for the Sacramento-San Joaquin Delta	Habitat	How do the 1- and 2-D model simulations of flow and contaminant transport in the delta compare relative to one another and against measured conditions?
				$ 946519			

Proposals Not Recommended For Funding as Part of the 2010 POD Workplan (n=6)

From 2009-10 IEP POD Proposal Solicitation; Review Tiers: A=highly recommended, B=recommended, C=not recommended; Ranks within tiers: 1=high, 2=middle, 3=low

PI Last Name	PI Affilition	Element Title	Priority Topic	2010 Cost (1 year)	Intended study duration (years)	Total Cost (whole study duration, if given)	Projected Year 2 budget	Projected Year 3 budget	Proposal ID Number	Review Tier & Rank for Solicited Element Proposals	IEP Review Summary
Guerin	Private	Isotopes and Delta Models: Combining Forces to Characterize Habitat and Nutrient Dynamics in the Sacramento River and Yolo/ Cache/Liberty Area	Habitat and Bottom-Up	$ 40000	2	$ 80000	$ 40000		12&13	B2	• Interesting potential questions, but lack of detail about how they will be answered. • Study tasks are not clearly linked and main goals are not clearly presented. • Synthesis methods are not explained. Unclear if the synthesis goals can be achieved (author acknowledges that this is a "challenging task"). • Isotope-hydrodynamic modeling collaboration is creative and attractive, but needs more explanation about how this will really work.
Gross	Private	3D simulations of delta smelt hatching distribution and mortality: Investigating the hydrologic and biological factors affecting recruitment.	Populations and Top-Down	$ 263321	1				11	B2	• The combination of otolith work and sophisticated modeling to answer important questions is very attractive, but there are major concerns about determining "hatch locations" from 20-mm survey data and otoliths due to poor spatial resolution (although mercury isotopes might help) and a low number of years (1999 & 2001). • The mercury isotope method (Hobbs) is unproven and should be established first in a pilot study, before undertaking the entire project. • Overall, details on budget and deliverables are lacking.
Werner	UCD	The Effects of Toxic Contaminants on Delta Smelt and its Prey Organisms	Habitat	$ 536460	1				43	B3	• Relevant study that builds on existing samples and previous and ongoing studies, proven and highly skilled investigators. • Overall, proposal lacks clarity and focus: questions much too broad, important details about approaches and implementation lacking for each task, study design not well specified, budget details missing. • Task 1 would likely provide the largest added value to the POD program, but also suffers from lack of focus and details.
Monismith	Stanford U	Application of an open source, three-dimensional, unstructured-grid model to the Sacramento/San Joaquin Delta	Habitat	$ 124237	3	$ 546370	$ 210387	$ 211745	32	B3	• Overall good proposal with high caliber investigators, but lower priority POD topic relative to other proposed topics, especially because 3D modeling capability exists for the Delta, albeit not open source. • Good idea to develop an open-source 3D model encompassing the Delta, Bays, and coastal ocean, if funding becomes available. • Expensive three-year project, not best “value added” given current IEP POD program needs and funding availability. • An open-source model will not eliminate the need for highly skilled modelers.
Pellerin	USGS	Improved Monitoring of Water Quality and Pelagic Organism Decline in the Delta with Continuous In Situ Sensor Measurements	Habitat	$ 148645	1				33	B3	• Overall nicely presented proposal and relevant idea for important monitoring and research tool development. • Opportunity to complement several other studies in the northern Delta and serve as a pilot for more continuous monitoring; well leveraged, although more thought could be given to effective integration with other studies such a BREACH III. • Reviewers appreciated the description of linkages to the POD conceptual model and derived hypotheses and questions, but felt that it remained unclear that this project would really deliver new POD insights. Also relatively expensive, thus likely not best “value added” given current IEP POD program needs and funding availability. • Site selection within Liberty Island and modeling or data analysis methods (other then QA/QC & interpolation) are not sufficiently described and justified. • Not enough time allocated in the end of project for analysis, synthesis, & writing.
LeDoux-Bloom	DWR	Investigating habitat use and predation of striped bass (Morone saxatilis) via (DIDSON – Dual-frequency IDentification SONar).	Habitat and Top-Down	$ 37252	1				FTC 4	C1	• The major questions proposed do not match the conceptual model or the significance section. • Many important details on study design are lacking. • Because of this, it is very unclear that this study will yield useful results.
				$ 1149915			$ 250387	$ 211745			

Draft 2010 IEP POD Workplan: Ongoing Elements from 2009 POD Workplan (n=46)

Table 2A Page Number (2-17-2010 version)	IEP Program Element Number	P.I.	Element Title	State budget crisis impacts (Stop Work Order = SWO or Furloughs = F)
1	72	DWR	Environmental monitoring program	
2	3	DFG	Fall midwater trawl	F
3	7	DFG	Summer townet survey	F
3	53	Hrodey (FWS)	DJFMP - Reestablishment of Liberty Island beach seine	
4	47	Sommer (DWR)	Yolo bypass monitoring	
4	88	DFG	Spring Kodiak trawl	F
4	96	DFG	Smelt larvae survey	F
5	33	DFG	20mm survey	F
7	60	Bennett (UCD)	Evaluate delta smelt otolith microstructure	SWO
7	61	The (UCD)	Delta smelt histopathology investigations	SWO
8	38	Loge (UCD)	Development and implementation of IBM of striped bass and longfin smelt	
8	41	Kimmerer (SFSU)	Modeling delta smelt in the S.F. Estuary	SWO
8	43	Newman (FWS)	Estimation of pelagic fish population sizes	
8	62	Slater DFG)	Fish diet and condition	
8	106	DFG	Estimates of fish and zooplankton biomass	
9	108	Lindberg (UCD)	Delta smelt culture facility	
9	133	Sih (UCD)	Impacts of largemouth bass on the Delta	
9	135	May (UCD)	Delta smelt genetics	SWO
9	136	Kimmerer/Sullivan	Bioenergetics of zooplankton species	
10	137	May/Hobbs/Israel (UCD)	Population genetics and otolith geochemistry of longfin smelt	
10	142	Lang (UCSD)	Investigating lower trophic levels of Suisun Bay food web	SWO
14	44	Kimmerer (SFSU)	Zooplankton fecundity and population structure	
15	46	Fleishman (UCSB/NCEAS)	Overlap/Synthetic analyses of fish and zooplankton	
15	132	Sommer (DWR)	Effects of the Cache Slough complex on north Delta habitat	
15	138	Dugdale (SFSU)	Effects of waste water management on primary productivity	
15	141	Gross (Consultant)	3-D modeling of the Delta	
16	147	Simenstad (UW)	BREACH III: Evaluating and predicting restoration thresholds	SWO
16	149	Brown (USGS)	Pelagic Organism Declines in the California Delta, The Book	
16	150	Winder (UCD)	Plankton dynamics in the Delta: trends and interactions	SWO
16	152	Mioni (UCSC)	Environmental controls on the distribution of harmful algae and their toxins in the SFE	SWO
17	153	Dugdale (SFSU)	Comparison of nutrient sources and phytoplankton growth and species composition	SWO
19	65	Gehrts (DWR)	Trends in benthic macrofauna abundance and biomass	SWO
19	76	Stillman (SFSU)	Corbula salinity tolerance	
19	79	Lehman (DWR)	Field survey of *Microcystis* bloom biomass and toxicity	SWO
19	87	DWR & Tenera (Mirant)	Investigation of power plant impacts	
19	89	IEP	Directed field collections	
20	130	Benigno (DWR) and Portz (USBR)	Feasibility of using towed imaging systems	
20	131	Baxter (DFG)	Use of acoustics to measure trawl openings	
20	139	The (UCD)	Effects of *Microcystis* on threadfin shad	
24	107	Morinaka (DFG) and Bridges (USBR)	Fish facility history	
25	140	Castillo (FWS)	Pilot markrecapture to estimate prescreen fish loss	SWO
26	127	Werner (UCD)	Contaminants and biomarkers work	
26	146	Johnson (UCD)	Synthesis to develop a comprehensive regional monitoring program for the Delta	
26	154	Breuer (DWR)	Spatial and temporal quantification of pesticide loadings	SWO
	82	Kimmerer (SFSU)	Food web support for delta smelt and other estuarine fishes	SWO
	148	Stacey (UCB)	Spatial and temporal variability of Delta water temperatures	